the rubbing and centrifugating repeated with the solid portion until a series of clear fluids was obtained. The first fluid was designated as TO, the others as TR. Both are completely absorbable and non-abscess-forming. The TO contains the substances soluble in glycerin and acts essentially like tuberculin and TA. TR contains the substances not soluble in glycerin and immunizes decidedly. When TR is given it may produce a reaction; this is not necessary to its effect. The author tries to avoid a reaction, but yet to get patients as rapidly as possible immune to large doses of TR, and he thinks against the bacilli, too, as such patients no longer react to tuberculin or to TA. Twenty per cent. of glycerin is added to the preparation for preservation. The fluid is diluted with normal salt-solution before injecting. He begins generally with $\frac{1}{500}$ mg. and increases to 20 mg. With this preparation Koch claims to have completely immunized a large number of guinea-pigs against repeated infection with virulent cultures. Cure of tuberculous animals is only possible if the treatment is begun promptly after the infection; this applies as well to people, where the injections must be made early and before the infection becomes mixed. Koch has treated a number of patients, and claims to have had good results, especially in lupus. Koch is not sure that he has used his preparations to the best advantage, and suggests that a combination with serum might be better. As far as preparations from cultures go, however, he thinks these are the best we can expect to get.

Tricuspid Murmurs; Localization of Systolic Mitral Murmurs.—HEITLER (*Wiener klin. Wochenschrift*, 1897, No. 17) has carefully studied systolic murmurs at the tricuspid and mitral areas. He thinks that tricuspid murmurs are more common than they have been supposed to be, and that his results will essentially modify the usual views as to the distribution of these murmurs. The author's observations have convinced him that the dogma that murmurs of different timbre are different in origin must be abandoned. He holds that murmurs are formed of a mixture of sounds and that these are not transmitted as a whole in all directions, but certain portions are heard in those places where the circumstances for their transmission are most favorable. The part that is well heard along the left ventricle wall differs from that which is well transmitted toward the right. Heitler further denies the dictum that when murmurs are heard in two different areas two murmurs are present, even if the murmur is less loud between the two areas. In one case, where autopsy showed the presence of mitral regurgitation alone, there was a loud musical murmur at the apex, growing fainter toward the base; there was a loud murmur in the aortic area with the same acoustic character as the one at the apex. The same thing may happen in the direction of the base of the sternum. The murmur of mitral regurgitation may be loudest at almost any point to the left of the left sternal border below the second interspace. Less frequently it is loudest in the aortic area, very rarely at the lower part of the sternum. Walshe alone has called attention to the tricuspid as the point of greatest intensity of mitral systolic murmurs. It is of the greatest value to auscult the heart as the contractions weaken. From the disappearance of certain of the murmurs or the appearance of pure tones where murmurs were heard before, an indication of the real origin of a murmur may be obtained.

The statements of authors concerning murmurs in the tricuspid are not very clear. Walshe describes them best: "They are faint and deep, with their greatest intensity over the ensiform process or at its base." Heitler's own work has shown that these murmurs possess striking acoustic characters. They are soft, faint, blowing, rarely rough; more superficial, shorter, and usually higher than the synchronous mitral murmurs. The area of distribution depends upon the intensity of the murmur. The loudest are audible over the entire sternum, generally plainest opposite the fourth interspace, and more distinct over the middle and left half than toward the right side of the sternum. Less frequently is the murmur loudest over the lower part of the sternum. The murmur is conducted to the right and left of the sternum, better toward the left than right. It is usually heard further to the left in the third than in the other interspaces. The fainter murmurs have a more limited distribution both upward and toward the left. They disappear at the level of the third rib; often they are only heard over the lowest part of the sternum and sometimes only over its left half. The diagnosis of tricuspid from mitral murmurs is generally easy, the acoustic properties are so different. The tricuspid murmurs in various diseases of the heart differ only by shades. The author thinks anæmic murmurs having the characters of mitral murmurs are caused by non-closure of the mitral valves, due to widening of the orifice, or weakness of the heart and papillary muscles, and that it is possible in some cases to say to which factor the murmur is due. Murmurs often occur early in disease of the heart-muscle, before any enlargement of the heart can be made out. These are due to disease of the papillary muscles, and are important but not serious signs.

The Alleged Lactic-acid Content of the Urine in Osteomalacia.—HOFMAN (*Centralbl. f. innere Med.*, 1897, No. 14) opposes the view, still held by many, that lactic acid occurs in the urine of osteomalacia. This idea, he thinks, is based upon the claim of C. Schmidt and O. Weber, that lactic acid occurs in the bones of such patients, and upon the improper conclusion that such acid must be at once excreted by the kidneys. Hofman examined the urine of two patients with advanced osteomalacia, using a slight modification of Salkowski's method. The physical character of the urine in both cases was negative, neither contained albumin or sugar. Although large amounts were used, 15 and 20½ litres, no lactic acid could be demonstrated.

The Phonendoscope and the Friction Method.—GROTE (*Münch. med. Wochenschr.*, 1897, No. 10), using a slightly modified form of Bianchi's instrument, agrees with Egger that high-pitched tones are not well transmitted. He thinks, however, that the phonendoscope may have a certain value for faint râles and heart-tones. With Bianchi's method of radial centripetal stroking the author found that the sound began to be heard suddenly, that its character was the same over different organs, and that as the instrument was moved the outline moved in the same direction or changed its shape. This depends simply upon the fact that the friction-tone is heard only when the skin on which the instrument rests is moved by the rubbing. The outlines depend on the strength of the friction, the point of application, and the tension of the skin about the instrument. As the skin became more